The Mineral Industry of Gabon

By George J. Coakley

The equatorial African Republic of Gabon is located on the Atlantic Ocean coast between the Republic of the Congo to the south and Cameroon and Equatorial Guinea to the north. It has an area of 257,670 square kilometers and supported a population of about 1.3 million in 2003. The mineral industry was dominated by crude petroleum production, with petroleum accounting for about 77% of export earnings and about 43% of the gross domestic product (GDP). Mining, by contrast, contributed about 2% to the GDP. After petroleum, timber and manganese were the major exports. Other nonfuel mineral commodities produced included cement, diamond, and gold (see table 1). In addition, Gabon has identified resources of columbium (niobium), iron ore, and phosphate. With a small population and a petroleum-based economy, the GDP based on 2003 purchasing power parity was estimated to be $7.3 billion and the GDP per capita, to be $5,500, which was one of the highest in Africa. The country's income distribution, however, was skewed to the wealthy, and almost one-half of the population lived below the poverty line. The real GDP rate of growth for 2003 was estimated to be 1.2%. Gabon participates in the Central African Economic and Monetary Community with five other countries; its currency [the Communaute Financiere Africaine franc (CFA or XAF)] is pegged to the euro (€) at a rate of CFA655.957=€1.00 (U.S. Central Intelligence Agency, 2004§[1]). Some of Gabon's gains from increased oil prices in 2003 were offset, however, by the devaluation of the dollar against the euro, which caused the exchange rate to fall to CFA581.2=$1.00 in 2003 compared with CFA696.99=$1.00 in 2002. The International Monetary Fund (IMF) encouraged the Government to pay foreign debt arrears as a priority, then to place excess oil revenues—which were estimated to be nearly $190 million in 2003—into a Fund for Future Generations to be used after oil resources are depleted. Crude oil production has been on a declining trend since 1997, although owing to a startup of one small field and improved extraction rates, production increased nominally to 268,000 barrels per day (bbl/d) compared with 252,000 bbl/d in 2002. The total value of merchandise exports in 2003 was estimated by the IMF to be $2.89 billion, of which about $2.23 billion was attributable to petroleum. Export data for 2002 showed the next leading exports to be timber (about $323 million) and manganese (about $118 million). More than 50% of exports went to the United States; 22% went to the European Union. The total value of merchandise imports in 2003 was approximately $700 million (International Monetary Fund, 2004a§, b§).

Government Policy and Legislation

The Ministère des Mines, de l'Energie et du Petrole is responsible for the administration of the minerals sector in Gabon. Mining is regulated by the mining code of 2000 [law No. 005/2000] and the Investment Charter of July 23, 1998 [law No. 15/98]. Ownership of oil and gas and all mineral rights are vested in the Government and regulated through the Direction Générale de l'Exploration et de l'Exploitation des Hydrocarbures by the Exploration and Production Sharing Contracts (EPSC) Law of January 1983 [law No. 14/82].

Commodity Review

Metals

Columbium (Niobium).—Cluff Mining plc of the United Kingdom held the rights to the Mabounié phosphate- and niobium-bearing carbonatite deposit, which is located in central Gabon. Cluff reported an indicated mineral resource of 16.72 million metric tons (Mt) of carbonatite ore grading 1.75% niobium pentoxide (Nb_2O_5) that contains 292,600 metric tons (t) of niobium oxide. Work carried out during 2001 included most of the major elements of a feasibility study, including two pilot-scale process test programs to examine the potential to produce a 50% Nb_2O_5 concentrate or a value-added ferroniobium. During 2002 and 2003, Cluff focused its corporate efforts on platinum projects in South Africa and negotiated to have its partners in the joint venture acquire Cluff's 35% interest in the Mabounié project (Cluff Mining plc, undated§). In April 2004, Cluff Mining plc changed its name to Ridge Mining PLC.

Gold.—Gold and diamond production was chiefly by small-scale artisanal miners and was not well documented. SearchGold Resources Inc. of Canada held a 90% interest in the locally incorporated company Ressources Golden Gram Gabon, S.A.R.L. During 2003, Searchgold conducted a scoping study to evaluate the possibility of developing an open pit mine at Bakoudou. The scoping study reported out a preliminary resource that included 2.1 Mt of measured and indicated oxide ore at a grade of 2.45 grams per metric ton (g/t) gold and 570,000 t of measured and indicated sulfide ore at a grade of 6.11 g/t gold. The company will examine two development options: milling at a rate of 60 to 75 metric tons per hour (t/hr) over 5 years at a rough estimated capital cost of $8.2 million, and milling at a rate of 120 to 150 t/hr over 2.5 years at an estimated capital cost of $11.8 million (SearchGold Resources Inc., 2004§).

During 2003, SouthernEra Resources Ltd. discovered a geochemical gold anomaly in the Koumba (Kolissen) gold district while conducting exploration for diamond on its Makongonio and Kango concessions. The company will conduct a 10- to 15-hole drilling program for gold during the first quarter of 2004 (SouthernEra Resources Ltd., 2003§).

---

[1]References that include a section mark (§) are found in the Internet References Cited section.

Iron Ore.—Owing to the increasing world demand for iron ore during 2002 and 2003, particularly in China, several international companies revisited known but undeveloped iron ore deposits in Africa, including the Belinga iron ore deposit in northwest Gabon. Belinga had been explored by U.S. Steel in the 1980s; at that time, a resource of 566 Mt at a grade of 64.24% iron ore, 2.18% silica, and 0.122% phosphorous was identified. The remote location of Belinga would require that a 200-kilometer (km) rail spur be built to the Transgabonais railway line, over which the ore could be transported to the export harbor at Owenda.

Manganese.—The Eramet Group of France, through its Eramet Manganese Division, operated the Moanda manganese mine, which was located near Franceville; the Mine was owned by the Compagnie Miniere de l'Ogoouе S.A. (Comilog), which was a 58% owned subsidiary of Eramet. In 2003, manganese production increased to 2 Mt, which included 400,000 t of sinter, compared with 1.856 Mt in 2002. Comilog had the capacity to produce 2.5 Mt/yr of manganese ore, which could include 600,000 t/yr of sintered manganese. Ore was shipped from the Moanda Mine 600 km via the Transgabonais railway to the Owenda minerals port in Libreville. In May 2003, Comilog received a contract from the Government to manage the full length of the Transgabonais railroad from Franceville to Libreville. Comilog anticipated that improved track maintenance work would increase train frequency and allow for the production and shipment of its full capacity of 2.5 Mt of manganese ore in 2004 (Eramet Group, 2004§). There was some indication that Brazilian interests were examining the potential for development of the Okondja manganese deposit in southeastern Gabon.

Industrial Minerals

Cement.—Société des Ciments du Gabon, which was owned by Heidelberger Zement AG of Germany, operated one cement plant at Cimenterie de N'Toum with the capacity to produce 400,000 metric tons per year (t/yr) of cement and two clinker grinding plants at Franceville and Owendo with the capacity to produce 170,000 t/yr and 240,000 t/yr of clinker, respectively (Heidelberger Zement, 2000§).

Mineral Fuels

Petroleum.—Gabon was the third leading oil producer in Sub-Saharan Africa following Nigeria and Angola; at 2003 production rates, however, its 2.5 billion barrels of proven oil reserves were forecast to be depleted within 22 years (Elias Johnson, International Energy analyst, U.S. Energy Information Administration, oral commun., 2005). Shell Gabon SA was the largest operator and accounted for a significant volume of national production chiefly from its offshore Rabi-Kounga oilfield. In early 2003, Shell and its partners, which included the Total Gabon S.A. (formerly Elf Gabon) of France, signed a new exploration and production-sharing contract with the Government of Gabon that extended partnership rights to the onshore Rabi-Kounga oilfield for another 10 years effective January 1, 2003. The partnership planned to invest $152 million in a gas injection system to improve recovery at Rabi-Kounga, which produced at a rate of 55,000 bbl/d during 2002 (TotalFinaElf Group, 2003). Production from fields operated by Total Gabon during 2003 reached 38 million barrels, 26.6 million barrels of which the company acquired under production-sharing contracts; the Government's share of 11.4 million barrels represented payment-in-kind for taxes owed to the Government by Total Gabon (Total Gabon S.A., 2004§). Other companies in production or actively exploring included Eni of Italy; Pan-Ocean Energy Corporation Ltd. of Canada; Perenco, which was a European company with offices in London and Paris; Petronas Carigali (Overseas) of Malaysia; Sasol Ltd. and Energy Africa of South Africa; Tullow Oil plc of Ireland; and the U.S. companies Amerada Hess Corp., Forest Oil Corp., Marathon Oil Corp., and Vaalco Energy Inc. The consortium of Pan Ocean, Sasol, and Vaalco Energy began development of its Etame block oilfields during 2003 at a rate of 14,300 bbl/d. The Etame Fields were estimated to contain 60 million barrels of proven and probable oil reserves. The consortium of Amerada Hess, Shell Gabon, and Total Gabon operated the onshore Atora Field at a rate of 20,000 bbl/d, with reserves estimated to be between 50 million and 100 million barrels (U.S. Energy Information Administration, 2003§). Perenco, which was the country's fourth leading producer, produced approximately 39,000 bbl/d, of which 13,500 bbl/d came from its two new fields, which are located onshore at Niungo and offshore at Ompoyi (Alexander's Oil & Gas Connections, 2002).

Outlook

The outlook for the future of minerals development in Gabon is modest and contingent on future market conditions and exploration successes. The economy is likely to be dominated by the petroleum sector for the near future with new exploration focusing on deepwater basins. The potential for new developments in columbium (niobium), gold, manganese, and possibly phosphate and iron ore suggests a continued role for mining in the economy. The lack of adequate infrastructure in many areas of the country, however, inhibits new grassroots exploration and remains a major cost constraint on development of the well-defined iron ore deposit at Belinga.

References Cited

Alexander's Oil & Gas Connections, 2002, Company news—Africa—Gabon launches two new fields: Alexander's Oil & Gas Connections, v. 7, no. 22, November 13, 2 p.

TotalFinaElf Group, 2003, Elf Gabon signs extension of Rabi-Kounga license with Gabonese Republic: Paris, France, TotalFinaElf Group press release, April 23, 1 p.

Internet References Cited

Cluff Mining plc, [undated], Gabon—Mabounié niobium project, accessed June 23, 2003, at URL http://www.cluff-mining.com/Pages/default.asp.
Eramet Group, 2004 (March 26), The Manganese Division in 2003—Annual report 2003, accessed September 23, 2004, at URL http://www.eramet.fr/us/actionnaires/rap_annuel.php#.
Heidelberger Zement, 2000 (September 11), Heidelberger Zement expands market position in Africa, Press Release, accessed July 10, 2003, at URL http://www.heidelbergcement.com/html/e/page.asp?pageID=123.
International Monetary Fund, 2004a (February), Gabon—Statistical appendix, IMF Country Report No. 04/29, accessed September 30, 2004, at URL http://www.imf.org/external/pubs/cat/longres.cfm?sk=17173.0.
International Monetary Fund, 2004b (September 8), Gabon—Letter of intent and amendment to the technical memorandum of understanding, accessed September 30, 2004, at URL http://www.imf.org/external/np/loi/2004/gab/02/index.htm.
SearchGold Resources Inc., 2004 (February 17), Met-Chem scoping study on the Bakoudou gold deposit, accessed September 23, 2004, at URL http://www.searchgold.ca/boakoudou-an.htm.
SouthernEra Resources Ltd., 2003 (December 17), SouthernEra's global business development and exploration review 2003, News Release, accessed September 22, 2004, at URL http://www.southernera.com/news/nr031218.pdf.
Total Gabon S.A., 2004 (March 4), Total Gabon—Financial results for fiscal year 2003, Press release, accessed September 24, 2004, at URL http://www.total.com/en/press/press_releases/pr_2004/040325_Total_Gabon_4707.htm.
U.S. Central Intelligence Agency, 2004, Gabon, World Factbook 2004, accessed September 20, 2004, at URL http://www.cia.gov/cia/publications/factbook/geos/gb.html.
U.S. Energy Information Administration, 2003 (October), Gabon, Country Analysis Brief, accessed September 23, 2004, at URL http://www.eia.doe.gov/emeu/cabs/gabon.html.

Major Source of Information

Ministère des Mines, de l'Energie et du Petrole
Direction Generale de Mines et de la Géologie
B.P. 576
Libreville, Gabon
Telephone: (241) 76-35-56
Fax: (241) 72-49-90

TABLE 1

GABON: PRODUCTION OF MINERAL COMMODITIES[1]

Commodity[2]		1999	2000	2001	2002	2003[p]
Cement:						
Clinker[e]	metric tons	180,000 [3]	210,000 [3]	300,000	350,000 [r]	350,000
Hydraulic[e, 4]	do.	200,000	210,000	210,000	210,000	350,000
Diamond, gem and industrial[e]	carats	500	500	500	500	500
Gold, mine output, Au content[e, 5]	kilograms	70	70	70	70	70
Manganese:						
Metallurgical-grade ore, gross weight (50% to 53% Mn)	thousand metric tons	1,839	1,706	1,758	1,816	1,950 [e]
Pellets, battery- and chemical-grade, gross weight (82% to 85% MnO_2)	do.	69	37	33	40	50 [e]
Total	do.	1,908	1,743	1,791	1,856	2,000
Natural gas, gross[e]	million cubic meters	99	99	99	80 [r]	79
Petroleum:						
Crude	thousand 42-gallon barrels	124,500	118,625	98,550 [r]	91,980 [r]	97,820
Refinery products	do.	6,315	4,354	6,672 [r]	6,500 [r]	6,500 [e]
Uranium, content of concentrate[6]	metric tons	347	--	--	--	--

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [p]Preliminary. [r]Revised. -- Zero.

[1]Table includes data available through September 2004.

[2]In addition to the commodities listed, a variety of crude construction materials (clays, sand and gravel, and stone) is also produced, but output is not reported, and available information is inadequate to make reliable estimates of output levels.

[3]Reported figure.

[4]Includes cement produced from imported clinker.

[5]Gold production figures do not include production smuggled out of the country, which in recent years was estimated to exceed 400 kilograms per year.

[6]Moanda uranium mine depleted and closed in 1999.